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1 ATGGCCCCG AGCAAGCCG GCGGGCGCTG CCGCCCCCGT GCGAGCCGCC GCGGGCGCGG CCGGTACCGC CTCGCCGAGA GCGGGGGGG GCGGGGGCGC
TACCGGGGG TCGTTCGGC CGGCCGGGAC GGGCGGGGCG CGCTCGGGG GCGCCCGCGG GGCATGGCG GAGCGCTCT CGGCCCCCCC GCGCCCCGCG
1 M A P Q Q G R P A L P A R C E P P A A P P V P P R R E R G G R G A R
101 GCGGGCCCG GGTGTCCGG GGTCTCCGG GGTCTCCGG GCGGGGGCG GCGGGGGGCA AGTGGTGTG GGTGGCGGAC GCGGGGGTGG GCAAGACCAG
CGCCCCGGC CCACAGGCC CCAGCCCCG GCGCCCCCGG CGGGTCCCT GCGGTCAGT TCACGACAGA CCAGCGCTG CCGGGCCACC CGTTCGTGTC
35 G P G V S G G R A G G A E G R G V K C V L V G D G A V G K T S
201 CCTGTGTGTC AGCTACACA CTAACGGCTA CCCCACGAG TACATCCCTA CGGCCTTCGA CAATCTCTCG GCCGTGTGT CTGTAGATGG GCGGCCTGTG
GGACCACGAG TCGATGTGGT GATTGCCGAT GGGGTGGCTC ATGTAGGAT GCGGAAGCT GTTGAAGAGC CGGCACCACA GACATCTACC CGCCGGACAC
68 L V V S Y T T N G Y P T E Y I P T A F D N F S A V V S V D G R P V
301 AGACTCCAGC TCTGTGACAC TGCAGGACAG GATGAGTTG ACAAGCTGAG GCCCTCTGC TACACCAACA CAGACATCTT CCTGTGTGC TTCAGCGTGG
TCTGAGTTC AGACACTGTG ACGTCTGTG CTACTCAAC TGTTGACTC CGGGGAGACG ATGTGTTGT GTCTGTAGAA GGACGACACG AAGTCGCACC
101 R L Q L C D T A G Q D E F D K L R P L C Y T N T D I F L L C F S V V
401 TGAGCCCCC ATCCTTCCAG AACGTGGCG AGAAGTGGT TCCAGAGATT CGACGTCACT GCCCAAGGC CCCCATCATC CTGGTCGGA CACAGTCGGA
ACTCGGGGNG TAGGAAGTC TTGCACCCG TCTTCAACCA AGTCTCTAA GCTGCAGTGA CCGGTTCGG GGGGTAGTAG GACCAGCCCT GTGTACGCTT
135 S P T S F Q N V G E K W V P E I R R H C P K A P I I L V G T Q S D
501 CCTCAGGGAG GACGTCAAAG TGCTCATAGA ACTGGACAAG TGCAAGAGA AGCCGGTGC TGAAGAGCG GCGAAGCTGT GCGCGGAGGA AGTCAAAGCT
GGAGTCCCTC CTGCAGTTTC ACGAGTATCT TGACCTGTTC ACGTTTCTCT TCGGCCACGG ACTTCTCCGC CGCTTCGACA CCGGCTCCT TCAGTTTCGA
168 L R E D V K V L I E L D K C K E K P V P E E A A K L C A E E V K A
601 GTCTCCTACA TCGAGTGCTC AGGTTGACT CAGAAAACC CAGAAAGGT TTTCGACGCC GCCATTGTTG CTGGTATCCA GCATCAGAC TCCCAGCTAC
CAGAGGATGT AGCTCACGAG TCGCAACTGA GTCTTTTGG AGTTTCTCCA AAAGCTGCGG CCGTAACAAC GACCATAGGT CGTGTGCTG AGGTGCGATG
201 V S Y I E C S A L T Q K N L K E V F D A A I V A G I Q H S D S Q L Q
701 AGCCAAAGAA GTCTAAAGC AGGACCCCG ATAAGGTGGG GGACCTGTCC AAGTCTTGGT GGAGGAAGTA TTGTGCTCTG GCCTGACTCT CGCAAAATAGC
TCGGTTTCTT CAGATTTTCG TCCTGGGGCC TATTCCAGC CCTGGACAGG TTCAGAACCA CCTCCTTCAT AACGACGGAC CGGACTGAGA GCGTTTATCG
235 P K K S K S R T P D K V R D L S K S W R K Y C C L A O
801 AGGTGTTTAA GCTGCAACAG CTCTTTATGG ACGAGGCTGT CATAGGATGA GCCCAAAGC ACCCTCTTCT GCCCTTAACT TCCTGTGTG GGGAGCTTAG
TCCACAAATT CGACGTTGTC GAGAAATACC TGCTCCGACA GTATCCTACT CCGGGTTTCG TGGGAGAAGA CCGGAATGA AGGACACACG CCCTCGAATC
901 GGCTGAGATT CATATGCAA ATACGTTTTT TTAATAATTG AAAGTTACAT TTTTTTCTG TTAAGTCTGG AAGCTTTGAG CTGTAGACCT CCGAATTAAT
CCGACTCTAA GTATACGTTT TATGCAAAAA AATTTTAACT TTTCAATGTA AAAAAAGAC AATTCAGACC TTCGAAACTC GACATCTGGA GGCCTAATTA
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FIG.- 1A

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1001	TTATATTCCA	TATGAAAAGG	GCTCTTTCAA	GCGGGGTGTC	AGCATGAAGT	TCTGCTCTGT	TGTACAGGAC	AAAGAGAAT	GAATGGGACC	TTCTCTCTGAT
	AAATATAAGGT	ATACTTTTCC	CGAGAAAGTTT	CGCCCCACAG	TCGTACTTCA	AGACGACACA	ACATCTCTCTG	TTTCTCTCTTA	CTTACCCCTGG	AAGAGGACTA
1101	TAAGGGCTAC	TGAGGGCTCA	GTGCAGGGCA	CGTGTGCACC	AGGCTTGGTG	AGAGTGAGCA	AGCGTGAGCT	TTGAAACCAC	ACAGGCCACC	CCCGTTTGTG
	ATTCCCGATG	ACTCCCGAGT	CACGTCCCGT	GCACACGTGG	TCCGAACCAC	TCTCACTCGT	TCGCACTCGA	AACCTTGGTG	TGCTCGGTGG	GGGCCAAAAC
1201	TAAGGGCAAA	GATCTGAAAC	CAGCAAGGGC	CTTCTGCTTA	CGAAACCTCG	AGCCCCATCC	TTCTCTTTTAC	TCAGATTCTC	TTAGGATTTT	AAAAACAACA
	ATTCCCGTTT	CTAGACTTTG	GTGCTTTCCG	GAAGACGAAT	GCTTTGGAGC	TCGGGTAGGG	AAGACAAATG	AGTCTAAGAG	AATCCTAAAA	TTTTTGTGGT
1301	AACATCCAC	AGCCTACTGG	CATAGTGTG	GCGAACAGTG	CACCTTGCTTG	TTACGGTFTT	TTTTTGTFTT	TTTAAATCAC	GTGACCAGTT	ATATTGCTAT
	TTGTAGGGTG	TCGGATGACC	GTATCACAA	CGCTTGTAC	GTGAACGAAC	AATGCCAAAA	CAAAACAAAA	AAATTTAGTG	CACCTGGTCAA	TATAACGATA
1401	GAAAAATGGT	GAGATGCCTC	GTAGAAAGGC	AGTGCTGGGT	GCACATGTGA	CATTTTCTTC	AGGAGCGAC	TCATGGTGAG	ACCAGAGAGG	GCTCTTAGCT
	CTTTTACCAC	CTCTACGGAG	CATCTTCCGC	TCACGACCCA	CGTGTACACT	GTAAAGAAG	TCCCCTCGCTG	AGTACCACCTC	TGGTCTCTCC	CGAGAATCGA
1501	TGCAGGACTG	GCTTCTGTCAG	GGCATCTGTG	TCCTGCTGTT	AAAAGCAGGA	GGAGGTGCTT	GTCTGGGAGC	TTTAAAGTGTG	CTGGGCTCAT	ATCGTCCCGT
	ACGTCTCTGAC	CGAAGACGTC	CGTAGACAC	AGGACGACAA	TTTTTCGTCT	CCTCCACGAA	CAGACCCCTCG	AAATTCACAC	GACCCGAGTA	TAGCAGGGCA
1601	TTGCAAGGAA	TTGGGCCACC	TTGAGAGGCC	ATAGTTGATG	GCTATGGGAC	ACACACACAC	TTTTTCTCTTA	AGTCCACCAA	AATGCCTGCC	TGTACACACA
	AACGTCTCTT	AACCCGGTGG	AACTCTCCGG	TATCAACTAC	CGATACCCCTG	TGTGTGTGTG	AAAAAGGAAT	TCAGGTGGTT	TTACGGACGG	ACATGTGTGT
1701	CACACACACA	CACACACACA	CACACACACA	CACACTGGCT	GGTTTGCTGA	TGGAACCTTT	AGACCACCCCT	CCCACCCCCA	CCCTCCCCCA	AGCATGGGCTG
	GTGTGTGTGT	GTGTGTGTGT	GTGTGTGTGT	GTGTGACCGA	CCAAACGACT	ACCTTGGGAA	TCGTGTGGGA	GGGTGGGGGT	GGGAGGGGT	TCGTACCCGAC
1801	CAAGTGTGAG	GGCACCACAC	CTTCTCTCTC	TTGACATTTT	TTTGAACAGA	CATCATTTTG	TAGGATCTTA	ATTTATACAT	TTTTTTCAGG	TCATAAAAATG
	GTTCACAGTC	CCGTGGTGTG	GAAGGAGAAG	AACTGTAAAG	AACTTGTCT	GTAGTAAAC	ATCTAGAAAT	TAAATATGTA	AAAAAAGTCC	AGTATTTTAC
1901	TGGGATGAAC	ATACTTTTGA	CCCCAGTGCC	TTCAGGGTCC	ATTGACTAGG	GAGGCACCTG	CTTAGGGGAC	AGGTATGTGC	AAGGCCTTAC	CCACCAGTGG
	ACCCCTACTTG	TATGAAACTT	GGGGTCACGG	AAGTCCCAGG	TAACTGATCC	CTCCGTGACA	GAATCCCCCTG	TCCATACACG	TTCCGGAATG	GGTGGTCACC
2001	CTTCTCGCTG	CAGTCAATGT	TGTGTGGCACT	TGTTCTTTAA	GGTGAGGGTC	TTATGACCGA	CTGTTCTGAG	ACAGCCCTGT	GTGAGGCAAG	CTCTTTCACA
	GAAGAGCGAC	GTCCAGTACA	AACACCGTGA	ACAAGAAATT	CCACTCCCAG	AATACTGGCT	GACAAGACTC	TGTCGGGACA	CAGTCCGTTC	GAGAAAGTGT
2101	GGGTTGTAGG	TATTTCCAAG	ACGCCATAGG	AACCAGACAG	TGAATCATAG	CTATCAGTTT	GCTGTGGGCA	AGGAACCTCT	TTTTTGGCCAC	CTGGTAACAA
	CCCAACATCC	ATAAAGGTTT	TGCGGTATCC	TTGGTCTGTC	ACTTAGTATC	GATAGTCAAA	CGACACCCCTG	TCCTTGGAGA	AAAAACCGGTG	GACCATTTGT
2201	AAATTTATGT	CTGTAAATTT	TTTCTTGCTA	TTTAAAAAAA	AAAAAAAAAA	A				
	TTAAAAATACA	GACATTTTAA	AAAGAACGAT	AAATTTTTTT	TTTTTTTTTT	T				

FIG. 1B

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1 CCCACGGTC CGCTGAATGT ATGTTGGTTA GAAAGTAGCC TTCTTGCTTC CTGCCCATGG CCAGTTCTCC ACCCTCTCTT TGGTGTCTTT TGTGGGAGG  
GGGTGGCAG GCGACTTACA TACAACCAAT CTTTCATCGG AAGACGAAG GACGGGTACC GGTCAGAGAG TGGGAGAGAA ACCACAAGAA ACACCCCTCC

101 GCACCTGGT TTGTGCGAGC CCTGGACTTC GAGAGGCTCC CAGAACCCAG GATCACCCAG CTCCTGTCTG TTTGCTTCAC TCCTTTCCCA GGGAGGACTT  
CGTGACACCA AACAGCGTCG GGACCTGAAG CTCTCCGAGG GTCTTGGGTC CTAGTGGTCG GAGGACAGAC AAACGAAGTG AGGAAAGGGT CCCTCCTGAA

201 GGGACTGTCC TGTCTGACAG GACGATCTG AGTTCGCCGA GCAAACCAGC TCACCACATA GATAGCTAGT TTAAACAATG TTTTAAATA AGGGACCTC  
CCCTGACAGG ACAGACTGTC CTGCTAGAC TCAAGGGCTT CGTTGGTCG AGTGGTGAT CTATCGATCA AATTGTGTAC AAAATTTAT TCCCGTGGAG

301 TGTTCACAAA GTGACATCTG CTGTGTGTTT TTCGAGGCC CTACTCTTA CAAGGTTGA AAAAAATGT GTGTATCCAT TCATGGGCTT GGTAGCCTTC  
ACAAAGTTT CACTGTAGAC GACACAACAA AAGTCCGGA CTATGAGAAT GTTCCAACT TTTTTTACA CACATAGGTA AGTACCCGAA CCATCGGAAG

401 TGGTCACCTC AGTCCTGTGG CTCTTAACTT ATTGCCAAC AATATTCAAT TCCCCTCAGC TACAATGAAT TGCAAGCAAA AGATGTGAA AAAAAGCACT  
ACCACTGGAG TCAGGACACC GAGAAATTGAA TAACGGGTG TTATAAGTAA AGGGAGTCG ATGTTACTTA ACGTTCGTTT TCTACAACTT TTTTTCGTGA

501 AATTAGTTT AAAATGTCAC TTTTGTGTTT TTATTTCTACA AAAACCATGA AGTCTCTCT CTCTCTCTCT GTTGTTAAAT CAGATTATGT  
TTAAATCAAA TTTTACAGTG AAAACCAAA AATAAGATGT TTTTGGTACT TCAAGAGAGA GAGAGAGAGA GAGAGAGAAT CAACAATTA GTCTAATACA

601 TCTTTTGTG TTTTGTGTTT TAGTGATCA TGTTTATGAG CAGAGTGGAG TTTAACAAATC CTAGCTTFAA AAAAAOCTA TTTAATGFAA GATATTCTAC  
AGAAAAAAC AAAAAACAAA ATCACTAAGT ACAAATACTC GTCTCACCTC AAATGTGTAG GATCGAAAT TTTTGTGGAT AAATTACAT CTATAAGATG

701 GCATCCTCA GATATTTGT ATATCCCTTA TGGCCTTTAG TCTGTACTTT TAATGTACAT ATTTCTGCT TGTGTGATTT GTAGATTCA CTGGTTAAAA  
CGTAGGAAGT CTATAAAACA TATAGGGGAT ACCGAAATC AGACATGAA ATTACATGTA TAAAGACAGA ACACACTAAA CATCTAAAGT GACCAATTTT

801 GAGAGAACAT TGAAGGCTT ATGCCAAGTG GAAGATAGAA TATAAATAA AAATGTTACT TGTATATTGG TAAGAGGTTT CAGTTGTCCT TCAGCTAATT  
CTCTCTGTA ACTTTCCGAA TACGGTTCAC CTTCATCTCT ATATTTTATT TTTACAATGA ACATATAACC ATTCTCCAAA GTCAACAGGA AGTCGATTAA

901 CATGTAGAGA AATATTTTAG TTGAAGCCAC AAGAGACAGC TTAGGGCAGT TATGTGTTCA AATAACAGAA GAACAGACTT TTTTTTTTTT TTAACCAAAA  
GTACATCTCT TTATAAAATC AACTTCGGTG TTCTCTGTGTCG AATCCCGTCA ATACACAAAT TTATTGCTCT CTTGCTGTGAA AAAAAAATAA AATTTGGTTT

1001 CCCAACTGT TGGGAACCT CAATAGAGCT CTATATGTAT TGGAAATCT CTCTCCTAT ATATGTTCT TCAAAAAGAG AGAGAGATC  
GGTTTGCACA ACCCTTGGG GTTATCTCGA GATATACATA ACCTTGTGTTT CACCTTAAGA GAAGAGGATA TATACAAGGA AGTTTTTCTC TCTCTCTTAG

1101 AAGCAGATGG CTTAAAGCTG GTCACAGGAT TGCTCACATT CTTTGGCAT TATGCATGCG ACTTAATTGT TTGAGAGTGT GTTGCTATTG TAACATCCCA  
TTGCTCTACC GAAATTCGAC CAGTCTCCTA ACGAGTGTA GAAACCGTA ATACGTACGC TGAATTAAACA AACTCTCACA CAACGATAAC ATTGTAGGGT

FIG. 2A

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1201 GAGATGAATC AAAAAGGCTC ACCCTCTCAC CCAGGAGCAG CTTTTCAGCT TATATACACA TGCATGTACA TGTGTGTGAT ATGCATGTGT GCATGCATGT  
CTCTACTTAG TTTTTCGGAG TGGGAGAGTG GGTCTCTCGTC GAAAGATCGA ATATATGTGT ACGTACATGT ACACACACTA TACGTACACA CGTACGTACA

1301 TTGTATTTTT GTGCTTGGCA CTATAACTAT TGCACCTCTC TATTCGGTTT GACTGAAGAG GGTCTTGTG GGCATCTCTT GTGTCCCATG CTTTATGGGA  
AACATAAAAA CACGAACGGT GATATTGATA ACGTGGAGAG ATAAGCCAAA CTGACTTCTC CCAGAACAC CCGTAGAGA CACAGGGTCA GAAATACCCCT

1401 AGAAAGCAAG GGTCTGCAGA GAACAGGAAC TAAAGATCC CTGTGTGATG TGCATTAAT AGAAGGCCTC CTGCTTCTG GAAATGTAGA CCAGAAATCTG  
TCTTTCGTTT CCAGACGCTT CTTGTCTCTT ATTCTTTAGG GACACACTAC ACGTTAATTA TCTTCCGGAG GACGAAAGAC CTTTACATCT GGTCTTAGAC

1501 GCCAGGACTG TAGACTGATA CATTATCTGG TCCCTTTCCT TTTTCTTTTC CTTCCCTGCC CTTCCCTTATG GATAACCTTG TAACATATTTG  
CGGTCTCTGAC ATCTGACTAT GTAATGACG AGAAGACGGA AAAAGAAAG GGAGGGGAG AACGAAATAC CTATTGGAAC ATTGTATATAAC

1601 AAACCTTTAA AGGAACCAA GAATGCATTA TTACACACAC ACACACACAC ACACACACTA CAGTAGACCA ACATATAGAG  
TTTGGAAATT TCCCTTTGGTT CTTACGTAAT AATGTGTGTG TGTGTGTGTG TGTGTGTGTG TGTGTGTGTG TGTGTGTGTG TGTGTGTGTG TGTGTGTGTG

1701 TGTTTAAAT AGCTTTTCTG GGCAAAATCA AACAACTGT GGCTCTAGGA CGCACATCTG TTTCCGTTTT TCTTCAGTTG TATATTGACC AGTATTCTTT  
ACAAATTTTA TCGAAAAGAC CCGTTTAAAT TTGTTGAACA CCGAGATCCT CGGTGTAGAC AAAGGCAAAA AGAAGTCAAC ATATAACTGG TCATAAGAAA

1801 ATTGCTAAAA CATATACTCG GGTAGCAAT GTACGATCT TTTCCCTTCC CATCTGGAG AGCATTCAG ACCTTCCCAG TACAGGAACA TCAATGAAGC  
TAACGATTTT GTATATAGAC CCCATCGTTA CAGTCGTAGA AAAGGGAAG GTAGGACCTC TCGTAAAGTT TCGAAGGGTC ATGTCTCTGT AGTTACTTCTG

1901 ATTTATATAC AGCGGTGGC AAGCAGAACC ACATCCAAA TGGTCACTGT CGGCTCTAG GGCAGGCTA TCTTGTCTCA GTCCCTGTTT TTTGTGCTCC  
TAAATATATG TCCGCCACCG TTCTGTCTTG TGTAGTTT ACCAGTCACA GCCCGAGATC CCGTCCGAT AGAACAAAGT CAGGACAAAG AAACACGAGG

2001 TGACCTTTGG GGCTGCCACT TCCAGGACG ACCACTGCTT GCCCACACTG TCCCTCCCTC CCCCCGGGG GATTTTCCCA ATAGCCAGTT CCATGTGTG  
ACTGGAACC CCGACGGTGA AGGTCTCTGC TGGTGACGGA CGGTGTGTGAC AGGGGGGGAG GGGGGCCCC CTAAAAAGGT TATCGGTCAA GGTACACAG

2101 TTTTCTGCA ACGGTATTCA AGCCATGGA ACCTTCAGAT AGGCCCCAAG AGCAGGATGA CACAACCTGT GGACAAGAGC TATATTAACT TGATCACTAG  
AAAAAGACGT TGCCATAAGT TCGGTTACCT TGGAAAGTCTA TCCCGGGTTC TCGTCTCTACT GTGTGGACA CCGTGTCTCG ATATAATTGA ACTAGTGATC

2201 TATGAGCTAA TATTAACATG ATCACCCTATG AAAGGCGCCT GCAAGAGCTG TTTAGTCTGA AATATAGGTA GAGAGCGGG ATGGCAAGGT TGTGTGTAAAC  
ATACTCGATT ATAAATTGAT TAGTGGGTAC TTTCCCGGGA CGTTCTCGAC AATCAGACT TTATATCCAT CTCTCGCCCC TACCGTTCCA ACAGACATTG

2301 TTCTGGTACA TGTGTGATGC ACACACGCAT GGAGGCAAGC TCTAAATCAC TGCATGTTA CTGTAAAGCA TACTTTAAAA ATATTATTG TTTTGAAGAAG  
AAGACCATGT ACAACTTACG TGTGTGCGTA CCTCCGTTCG AGATTTAGTG ACGTGACAAT GACATTTCGT ATGAAATTTT TATAAATAAC AAAACTTTTC

FIG.-2B

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2401 CATTTTCTAG TCCTCCCTCT CTTGGTGGAG CTGTAAACAA GATGGCATGT TGTGAAGGTT CAAGATGATT TTTTTTTAAA TCGCAGAAAC ATTTAGACAC
    GTAAAAGATC AGAAGGGAGA GAACCACCTC GACATTTGTT CTACCGTACA ACACCTTCCAA GTTCTACTAA AAAAAAATTT AGCGTCTTTG TAAATCTGTG

2501 CTAAGAACTA AAACCTTATAA AAGGGATCTT TGAATTTGCC TGTAAACATG GATTAATGTT TACACTTACA GCTGATGATT GGACGGTGT TTTATGTTAGG
    GATTCCTGAT TTTGAATATT TTCCCTAGAA ACTTAAACGG ACAATTGTAC CTAATTACAA ATGTGAATGT CGACTACTAA CCTGCCACAA AATACAATCC

2601 GAAATGCCCT GTTAACGAAC TTCATGAAGC AGATGTAATT AAAGGTTGAT GTGAGCCCAAT CTAGAAGGTT GAACAGTGT TTCAAAGAAC GGAGAGACTT
    CTTTACGGAA CAATTGCTTG AAGTACTTCG TCTACATTA TTTCCAACTA CACTCGGTTA GATCTTCCAA CTTGTCACAA AGTTTCTTTG CCTCTCTGAA

2701 ACATTTTAGA CCAATCTTTA TACATTTTGC TGAGCTAGAA AGGAGATAAA GATTATTTAT TTTTGTTCAT ATCTTGTAAT TTTCTATTAA AATCATTTTA
    TGTAATAATCT GGTTAGAAAT ATGTAAAAACG ACTCGATCCT TCCTCTATTT CTAATAAATA AAAACAAGTA TAGAACATGA AAAGATAAAT TTAGTAAAT

2801 TGAAGMMMAA AAAAAAAAAA AA
    ACTTWWKKTT TTTTTTTTTT TT
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FIG.\_2C

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CCCACGCGTCCGCATATGTCTCCTTTGTGAGGATCAACAGCTCGCTGGCAGTGGCGGCTT  
ACGAGGATGGGATCCTTAACATTTGGGACCTGAGAACCGGAAGGTTCCCTATCTTTCGTT  
TTGAGCATGACGCAAGAATACAAGCCCTTGCGCTGAGCCAAGAAAAGCCCATTGTTGCCA  
CGGCTTCTGCTTTTGACGTTGTGATGTTGTACCCCAACGAGGAGGGGCATTGGCATGTGG  
CCTCGGAGTTTGAAGTTCAGAAGCTGGTTGACTACCTTGAAATAGTTCCGAATACTGGGA  
GGTACCCTGTGGCAATAGCCACAGCCGGGGATCTGGTGTACCTGCTGAAGCCGACGACT  
CAGCCAGAACCCTTCATTATGTCAATGGCCAGCCTGCCACATGTCTGGATGTCTCAGCCA  
GCCAGGTTGCCTTTGGAGTGAAGAGTCTAGGATGGGTGTATGAAGGAAACAAGATCCTGG  
TGTACAGCCTGGAAGCAGAGCGCTGCCTCTCGAAGCTGGGCAATGCACTTGGAGACTTTA  
CCTGTGTCAACATCCGGGATAGCCCTCCCAACCTCATGGTCAGCGGCAACATGGACAGGA  
GAGTGAGGATTCATGACCTCCGCAGCGATAAGATCGCCCTGTCGCTGTCTGCCCATCAGC  
TGGGGGTGTCCGCAATTCCAAATGGATAACTGGAAAGGTTGTCAGTGGAGGCCAGGAGGG  
GTGGTGT

**FIG. 3**

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1  CCCACGGCTC CGCATATGTC TCCTTTTGTA GGATCAACAG CTCGCTGGCA GTGGCGGCTT ACAGGATGG GATCCTTAAC ATTGGGACC TGAGAACCGG
   GGGTGGCGAG GCGTATACAG AGGAACACT CCTAGTTGTC GAGCGACCGT CACCGCGAA TGCTCCTACC CTAGGAATTG TAAACCCCTGG ACTCTTGGCC

201 AAGGTTCCCT ATCTTTGGTT TTGAGCATGA CGCAAGAATA CAAGCCCTTG CGCTGAGCCA AGAAAAGCCC ATTGTTGCCA CGGCTTCTGC TTTTGACGTT
   TTCCAAGGGA TAGAAAGCAA AACTCGTACT GCGTTCTTAT GTTCGGGAAC GCGACTCGGT TCTTTTCGGG TAACAACGGT GCCGAAGACG AAAACTGCAA

201 GTGATGTTGT ACCCCAACGA GGAGGGGCAT TGGCATGTGG CCTCGAGTT TGAAGTTCAG AAGTGTTG TTGACCAACT TATGTAAGGC TTATGACCCCT
   CACTACAACA TGGGGTTGCT CCTCCCGTA ACCGTACACC GGAGCTCAA ACTTCAAGTC TTGACCAAC TGATGGAAC TTAATCAAGGC TTATGACCCCT

301 GGTACCTGT GGAATAGCC ACAGCCGGG ATCTGTGTA CCTGCTGAAG GCCGACGACT CAGCCAGAAC CCTTCATTAT GTCAATGGCC AGCCTGCCAC
   CCATGGGACA CCGTTATCGG TGTCCGCCCC TAGACCACAT GGACGACTTC CGGCTGCTGA GTCGGTCTTG GGAAGTAATA CAGTTACCGG TCGGACGGTG

401 ATGCTCGGAT GTCTCAGCCA GCCAGGTTGC CTTTGGAGTG AAGAGTCTAG GATGGGTGTA TGAAGGAAAC AAGATCCTGG TGTACAGCCT GGAAGCAGAG
   TACAGACCTA CAGAGTCGGT CGGTCCAACG GAAACCTCAC TTCTCAGATC CTACCCACAT ACTTCCTTTG TTCTAGGACC ACATGTCCGA CCTTCGTCTC

501 CGCTGCCTCT CGAAGCTGGG CAATGCACCT GGAGACTTTA CCTGTGTCAA CATCGGGAT AGCCTCCCA ACCTCATGGT CAGCGCAAC ATGGACAGGA
   GCGACGGAGA GCTTCGACCC GTTACGTGAA CCTCTGAAAT GGACACAGTT GTAGGCCCTA TCGGAGGGT TGGAGTACCA GTCGCGGTTG TACCTGTCTT

601 GAGTGAGGAT CCATGACCTC CGCAGCGATA AGATCGCCCT GTCGTGTCT GTCGCTGCT GCGCATCAGC TGGGGTGTG CGCAGTCCAG ATGATGACT GGAAGTTGT
   CTCACTCCTA GGTACTGGAG GCGTCGCTAT TCTAGCGGGA CAGCGACAGA CCGGTAGTCG ACCCCACAG CGGTACAGGTC TACCTACTGA CCTTCCAAACA

701 CAGTGGAGGC GAGGAGGGC TGGTGTCTGT GTGGGATTAC CGCATGAACC AGAAGTGTG GGAAGTGCAC TCCAGGCACC CTGTGCGCTA TCTCTCCTTC
   GTCACCTCCG CTCCTCCCCG ACCACAGACA CACCCTAATG GCGTACTTGG TCITTCAGAC CCITTCACGTG AGGTCCGTGG GACACGCGAT AGAGAGGAAG

801 AATAGCCACA GCCTCATCAC TGCCAAACGT GCCTACGAGA AGGTGCTGGG AAACCTCCGAC CTCGACAACT TTGCCTGTCA CAGGAGACAT CGTGGCCTGA
   TTATCGGTGT CGGAGTAGTG ACGGTTGCAC GGGATGTCT TCCACGACGC TTTGAGGCTG GAGCTGTGTA AACGGACAGT GTCCTCTGTA GCACCGGACT

901 TCCATGCCCTA TGAATTTGCT GTGGACCAGC TGGCCTTTCA GAGCCOCCCTT CCTGTCTGCC GCTTACCCCG TGACATCATG GCTGGATACA GCTATGACCT
   AGGTACGGAT ACTTAAACGA CACCTGTGCG ACCGGAAGT CTCGGGGAA GGACAGACGG CGAATGGGGC ACTGTAGTAC CGACCTATGT CGATACTGGA

1001 CGCACTGTCT TTCCCCCATG ACAGTATTTA GGGTGTCAAC TCATGTAGAC GTGGAAGGG CAGTTTACA AATGTAGAG TTGAGAGAG GCTCTGCAGC
   GCGTGACAGA AAGGGGTAC TGTATATAAT CCCACAGTGG AGTACATCTG CACCTTTCCC GTCAAAATGT TTACAATCTC AACCTCTCTC CGAGACGTCG

1101 ACATGGTGGG AGTTTGGGA CAGTGTCTGT TATGACTGTG GCCACACAGC CCTGTGCCCC TGTACAGAAC CAGACTCCAT TGTGCTCTTT CTCCTCTCTC
   TGTACCACCC TCAAAACCCCT GTCACAGGAC ATACTGACAC CCGTGTGTCTG GGACAAACGGG ACATGTCTTG GTCTGAGGTA ACGACGAAA GAGGAGGAGG

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FIG. 4A

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1201 TCCTCCTCCT CAGGCTTTGG TAGGACTGGC TGATGACTCA GAGTTAACTT TTCCAGGGGT GGCTCCTCCC CCTCAGCCTA TGGCAGCAGT GACACCCCCC
    AGGAGGAGGA GTCCGAAACC ATCCTGACCG ACTACTGAGT CTCAATTGGA AAGGTCCCCA CCGAGGAGGG GGAGTCGGAT ACCGTCTGTC CTGTGGGGGG
1301 CTCGTTCAT AGGCCAGGA CACAGGCCCT TCACCTGAC TGCTCTCTGG GTGTGGTGTG GAGGTGGAA CCAGAACTCT ACACGCATAG GCAAGCGTCA
    GAGCAAGGTA TCCGGTCCCT GTGTCCCGGA AGTGAACGTG ACAGAGGACC CACACCACGA CTCCCACCTT GGTCTTAGAG TGTGCGTATC CGTTCGCAGT
1401 GCCTCCAAGC TGCTTCCCCA GCTGTGAGCC TCCCAGCTG TCTCTCCAG GCACCCCTCCA GTGCAGCCCC TCCTCTGGGA TTCACACCCGT TGATAATTAT
    CCGAGGTTCC AGCGAGGGGT CGACAGTCCG AGGGGTGCGC AGAGGAGGTC CGTGGGAGGT CACGTCCGGG AGGAGACCCCT AAGTGTGGCA ACTATTAAATA
1501 AGGGCCACCT TACCTGTAGG AGCTGTTCTG TCCTGTACAT GTGCTATGAA GGAGACAGCC ATCCTTCCTG CAGAGGGAAA GGTTCATTGC ACAGGGATAG
    TCCCGGTGGA ATGGACATCC TCGACAAGAC AGGACATGTA CAGCATACTT CCTCTGTGCG TAGGAAGGAC GTCTCCCTTT CCCAGTAAACG TGTCCCTATC
1601 GGTCAAGTCT CAAGCCTAGC CGGTGGTGTG TCCTTCTGAC AAACGCAGCC ATAGCTCACC CACTCTGCC TCAAGTGTCT ATGGACAAAT CCACACATAG
    CCAGTCAGAG GTTCGGATCG GCCACCACAG AGAAGGACTG TTTCGGTCCG TATCGAGTGG GTGAGACCGA AGTCTCACAG TACCTGTTTA GGTGTGTATC
1701 TGGCCAGGAG ACCCAGTCAG AGCTCTTCAG AATCCCCACA GACCAGGCAC CTAACACACC TGCACAGAGG CCACCAGGTC TCAGGAGACA AAGTTCCTCT
    ACCGTCCTC TGGGTCAGTC TCGAGAAGTC TTAGGGGTGT CTGGTCCGTG GATTGTGTGG ACGTGTCTCC GGTGTCTCC CACCCCTCG AGTACCCCA
1801 CCCAGGGAAT ACCAGCTCAA AAAACAAGTG GGTGGGCAA CTCCACATTG GGTCTGCCGA GAGCAAGAAA AAAGAGGGGG GTGGGGGAGC TCCATGGGGT
    GGTTCCTTTA TGTCTGAGTT TTTTGTTCAC CCGACCGTTT GAGGTGTAAC CCAGACGGCT CTGCTCTCTT TTTCTCCCC CACCCCTCG AGTACCCCA
1901 GGATCCCCAG CTGGCAGCAG GAAGGTGCTG GAAGGCCTGA GAGGTGTGC AGTGCCCTCC CCGAGCCCTG GTGGTCTCTT CCTGTGTCTT GGTATGGAGT
    CCTAGGGTCC GACCGTCGTC CTTCACAGC CTTCGGGACT CTCCACACAG TCACGGGAGG GGTCTGGGAC CACCAGAGGA GGCACACAGA CCCTACCTCA
2001 CTAGTGGGTT TGTGGCATGA TCTCAGATCT TGGCATTGAG GCCTCTCCCC ATGCACAAGT GCCCAGGGGA GCTCACCTCC CTCTTGTCTG GCTGGCGCCC
    GATCACCCAA ACACCGTACT AGAGTCTAGA ACCGTAACTC CCGAGAGGGG TACGTGTTCA CCGGTCCCC CTGAGTGGAG GAGAACGACC CGACCGCGGG
2101 CCTGCTGGCC TGGTCTTGCT GTGTCTCTAC TCGAGCATTC CCAGTCTTAA GCTGTCCACT GGAGACATTT CTGTACAGGA AATTGGCTGT GCGGTCTAGT
    GGACGACCCG ACCAGAACGA CACAGGAGTG AGCTCGTAAG GGTCAAGATT CGACAGGTGA CCTCTGTAAC GACAGTCTCT TTAACCGACA CGCCAGTCTGA
2201 CCTTTCTGGG CTTTCGAGCC ATGAAAGGCC ACTGAAGAGC AGAGGTGACT AGAGTAGTTT CAAGCATACA TGCCCTTCTA GCCCCCAATC CCTGCCCTCT
    GGAAGAGACC GAAGCGTCGG TACTTTTCCG TGACTTCTCG TCTCCACTGA TCTCATCAA GTTCGTATGT ACGGGAAGAT CGGGGGTTAG GGACGGGGGA
2301 ACCCCACAG AGCATCTGTC CTCGTGGCT CTTGCCACTG CACCTGCTCC CAGGGTGGGG GACAGGCTGG CTCCCTGTGC TGCCTCTGAA GCCAGAAGAC
    TGGGGGTGTC TCGTAGACAG GAGCGACCGA GAGCGGTGAC GTGGACGAGG GTCCACCCCG CTGTCCGACC GAGGAGACAG ACAGGACTT CCGTCTCTG
2401 ACCAGGACAC AGCCCTGGGA GCCAGGGGTG GTACACATC TGCAGCTTGC CTTTGTGCTT AAGCGGCCAC TTCTGTCTCT TTATTAAAGG TTCTACACTG
    TGGTCTGTG TCGGACCTCT CCGTCCCCAC CAGTGTGTAG ACGTGAACG GAAACCGAA TTCGCGGTG AAGACGAGAC AATAATTTC AACATGTGAC
2501 AAAAAAAAAA AAAAAAAAAA AAAAAA
    TTTTTTTTTT TTTTTTTTTT TTTTTT

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FIG. 4B



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1  CTCGAACAGC GCAGGCGAGA CGGCTGGCG CGGCCGGAGC GCGAGCCAC GACCTCCCT GCGCGCCTTT GTCTACTGGC CGTGGCGGCC GGAACCGCCA
   GAGGTGTGCG CGTCCCGTCT CGCCGACCG GCGGCCTCG CGCTCGGTG CTGGAGGGA CCGCGGAAA CAGATGACCG GCACGCCGGG CCTTGGCGGT

101 CTCCTCAGGG CCGGGACGC GCCCGAGCT GTCGTGACA GCTCCTCCCT ACCGCAACC TCCTGGGCGG AGGGCGGTC GGGCGGGGCC CTGCTAGCCC
   GAGAGTCCC GGGCCCTGCG CCGGCTCGA CAGCCACTGT CGAGAGGGA TGCGTGGG AGGCCCGCC TCCCCGCCAG CCGGCCCGG GACGATCGGG

201 GCGACCGCAA GCCCGGCTC GCGGATCGAT GCCCCGCGAG CAGGGGACC CCGGTTCCC CGACCGCTGC GAGGCGCTC CGGTGCGGCC GCGTGGGAG
   CGCTGGCGTT CCGGCGCGAG CGCTAGCTA CCGGGCGTC GTCCCCCTGG GGCGAAGG GCTGGCGACG CTCGCGGAG GCCACGGCGG CGCAGCCCTC
   M P P Q Q G D P A F P D R C E A P P V P P R R E

301 CGCGGTGAC GCGGGGACG CGGCGCTGG GAGCGGGGG GCGGGGGCG TGCGGGGGT GCGAGGGG GCGCGTCAA GTGCTGCTG GTGCGCGACG
   GCGCCACTG CGCCCGCTGC GCCCGGACCC CTCGGGCCCC CGGCCCGCC ACGCCCCCA CGGCTCCCG CGCGCAGTT CACGACGAC CAGCGCTGC

25 R G G R G G R G P G E P G G R A G G A E G R G V K C V L V G D G

401 GCGCGTGGG CAAGACGAGC CTGTTGGTGA GTTACACCAC CAACGGCTAC CCACCGAGT ACATCCCTAC TGCTTCGAC AACTTCTCG CGTGTGTGTC
   CGCGCACCC GTTCTGCTCG GACCACCACT CAATGTGGTG GTTGCCGATG GGTGGCTCA TGTAGGATG ACGAAGCTG TTGAAGAGG GCCACACAG

59 A V G K T S L V V S Y T T N G Y P T E Y I P T A F D N F S A V V S

501 TGTGATGGG CGGCCCGTGA GACTCCAACT CTGTGACACT GCCGACAGG ATGAATTGA CAAGCTGAGG CCTCTCTGCT ACACCAACAC AGACATCTTC
   ACACCTACCC GCCCGGCACT CTGAGGTTGA GACACTGTGA CGGCTGTCC TACTTAACT GTTCGACTCC GGAGAGACGA TGTGTTGTG TCTGTAGAAG

92 V D G R P V R L Q L C D T A G Q D E F D K L R P L C Y T N T D I F

601 CTGCTCTGCT TCAGTGTGT GAGCCCTCA TCCTTCAGA ACGTCAGTGA GAAATGGGT CCGAGATTC GATGCCACTG TCCCAAAGCC CCCATCATCC
   GACGAGACGA AGTCACAGCA CTCGGGGAGT AGGAAGTCT TGCAGTCACT CTTTACCCAC GGCCTCTAAG CTACGGTGAC AGGTTTCGG GGGTAGTAGG

125 L L C F S V V S P S S F Q N V S E K W V P E I R C H C P K A P I I L

701 TAGTTGGAAC GCAGTCGGAT CTCAGAGAAG ATGTCAAAGT CCTCATTTGAG TTGGACAAAT GCAAGAAAA GCCAGTGCCT GAAGAGCGG CTAAGCTGTG
   ATCAACCTTG CGTCAGCTA GAGTCTCTC TACAGTTTCA GGAGTAACTC AACCTGTTTA CGTTCTTTT CGGTACCGGA CTTCTCCGCC GATTCGACAC

159 V G T Q S D L R E D V K V L I E L D K C K E K P V P E E A A K L C

801 CGCCGAGGAA ATCAAAGCG CCTCCTACAT CGAGTGTCTA GCCTTCACTC AAAAAACCT CAAGAGGTC TTTGATGCAG CCATCGTCGC TGGCATTCAA
   GCGGCTCCTT TAGTTTCGGC GGAGGATGTA GCTCACAAGT CGGAAGTGTG TTTTCTTGGG GTTCTCCAG AAACCTAGTC GGTACGAGC ACCGTAAGTT

192 A E E I K A A S Y I E C S A L T Q K N L K E V F D A A I V A G I Q
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FIG.\_5A

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901 TACTCGGACA CTCAGACA GCGAAGAAG TCATAAAGCA GGACTCCAGA TAAATGAAA AACCTCTCCA AGTCCTGGTG GAAGAAGTAC TGCTGTTTCG  
ATGAGCCTGT GAGTCGTTGT CGGTTTCTTC AGATTTCGT CCTGAGGTCT ATTTACTTTT TTGGAGAGGT TCAGGACCAC CTTCTTCATG ACGACAAAAGC  
225 Y S D T Q Q Q P K K S K S R T P D K M K N L S K S W K K Y C C F V  
1001 TATGATGCTG GCAAGACACC CAGAAAGGCT ATTTTCAGAT GAAATCGATA TTAGAAGCTA TATAGCTGA AACAACTCCT TTTACTGCGT AGAACCTATA  
ATACTACGAC CGTTCTGTGG GTCTTCTCCGA TAAAGTCTA CTTTAGCTAT AATCTTCGAT ATAATCGACT TTGTTGAGGA AAATGACGCA TCTTGGATAT  
259 O  
1101 TCGAGAGTGT GTGTATATGT ATTATAGGAG GAGCTCTCAA TTTTATGTAT TCTTCTGCG TTTAATTTTC TTGTTTGTGT GAGCTTAGGG ATGAGATACT  
AGCTCTCACA CACATATACA TAATATCCTC CTCGAGAGTT AAAATACATA AGAAAGACGG AAATTAAAAG AACAAACAAA CTCGAATCCC TACTCTATGA  
1201 TATGCAAGAT ATTTTGAAG TAAATTAAAC ATTTTTCACA TCTCTGAAA TTTAGAGTTC TAGACCTCTG GTTAATTTAT ATCTAATATG AAGAAGACAC  
ATACGTCTTA TAAAAACTTC ATTTAATTTG TAAAAAGTGT AGAGACCTTT AAATCTCAAG ATCTGGAGAC CAATTAAATA TAGATTATAC TTTCTTCTGTG  
1301 CTCTAATCTG GATGTTAAGA ATGAAGTCTT GCTACATTAT AATGTACAGA AGAGCAAAAG GGAGGAACAC TATGTTTAA CCTCTCTTGA TTAAGGGCTA  
GAGATTAGAC CTACAATTCT TACTTCAAGA CGATGTAATA TTACATGTCT TCTCGTTTTT CCTCCTTGTG ATACCAATTG GGAGAGAACT AATTCCCGAT  
1401 CTTAATGCAC AGTGCATTAT GTACACAGGT CAACCATGGT AACAAATAGT CTTAGCTTTG AAATCTCATG CAAACCATGC CTTTCTTTTA AGGAGCAAAA  
GAATTACGTG TCACGTAATA CATGTGTCCA GTTGGTACCA TTGTTATCAA GAATCGAAC TTTGAGGTAC GTTTGGTACG GAAAAAAAT TCCTCGTTTTT  
1501 ATCTGAGAAA AAAAGTGAGA GACCTCTGCC TACAAAACTT CAAACCATGC ACTTTTGTCA ATTGCTAATA CCCAGTTACT TATGATTTAA AAACAACCAA  
TAGACTCTTT TTTTCACTCT CTGGAGACGG ATGTTTGTGA GTTGGTCTAG TGAAAAACAGT TAACGATTAT GGGTCAATGA ATACTAAAT TTTGTTGGTT  
1601 CAGAAAACAT CCCACAGACT GTATGGCACT CTGTAGTCAA AAAAGGAAAC TTTCTTATTG GGACTTTTTCT TTCTTAGTCC AGTTGTGTG ACACATATGA  
GTCTTTTGTG GGGTGTCTGA CATACCGTGA GACATCAGTT TTTTCTTTTG AAAGAATAAC CCTGAAAAGA AAGAATCAGG TCAACACAAC TGTGTATACT  
1701 ACACAGACAA AGTCTATGC GGAGGAAAGC AAGTGTGGT CAGTAGTTTC ATGTTTTAGG GAGTGGTTCC TGTGGAGATC AGAAAGTGAC ATTTGCTTTC  
TGTGTCTGTT TCACGATACG CCTCCTTTTC TACACAAACA GTCATCAAAG TACAAAATCC CTCACCAAGG ACACCTCTAG TCTTTCACCTG TAAACGAAAG  
1801 GGTAATGTAA TACATGCACC AAATGCCTC AATCCTAGGT AACGAGGCA ACAGGGGCA CCTGTCTGGA TTGTTTAA ACCTCCATAC TCAAGCTGTC  
CCATGACATT ATGTACGTGG TTTTGACGGAG TTAGGATCCA TTGCTCCCGT TGTCCTCTGT GGACAGACCT AACAAAAAT TGGAGGTATG AGTTGACAG  
1901 TCTTCGGCAG GGAGTGAAT ACTCTTGA A GGCACACAGC AAGTGTGTGT GGGACACAAC ACAGATAAT TTTTCTTAAG TCGACCAAGA TGTACTTCTC  
AGAGCCGTC CCTCCACTTA TGAGAACTTT CCGGTGTCTG TTCACAAAACA CCTGTGTG TGCTATTAA AAAAGAATTC AGCTGGTCT ACATGAAGAG  
2001 TGTGTGACA CCCATGCACA CTCATGCACA GGTGTGTATG GGTGTATTG CTGTGATTC AGACTTTCAC ACCATTATG GGGAAAAGCG  
ACACACGTGT GGGTACGTGT GTCTATGTAT CCAGACATAC CGACATAAAC GACAACTAAG TCTGAAAAGTG TGTAAATTAC CCCTTTTCGC

FIG..5B

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2101 TGGCCACAAA AACAGATGCT AGGAAGCTTG GCTTCCTCTT CTGTGTGACC CTTTTTTGAA CCAACATCTT TTTTATTATA TTCAGAGTAT GTTTTAAAGT
    ACCGGTGTIT TTTGTCTACGA TCCTTCGAAC CGAAGGAGAA GAACAACCTG GAAAAAACCT GGTGTAGAA AAAATAATAT AAGTCTCATA CAAAAAATTCA

2201 GTATCTTAAT ATATACATTT TTTAGGACAT CTTAAATCTA AACAAAAAAT AAAATGAACA TCTCTTGAAA CCTGTAAAA CAACCAAGTTA AAGCCACAGA
    CATAGAATTA TATATGTAAA AATCTCTGTA GAATTTTAGAT TTGTTTTTTA TTTTACTTGT AGAGAACTTT GGACAAATTT GTTGTCAAT TTCGGTGTCT

2301 TGGCTTTTCA GGCAGTAGCA GCAGAGGCCA GTGACTCTG AGGACTCCTG AGGGCGGGG CGTGTAGCCA GCCAGGTGCA TGCCGGGACC ATGGCCCCCA
    ACCGAAAGTC CCGTCATCGT CGTCTCCGGT CACCTGAGAC TCCTGAGGAC TCCCGGCCCC GCACATCGGT CGGTCCACGT ACGGCCCTGG TACCGGGGGT

2401 TACTTGGCTG CTTCCTGTGA CAGTGAAATA CATCTTTCAA GGTGGCAGCT GTTAGGGCTG AATCTTCTGG AGAAAAAGGT GCCATCTCAG GAGAAATAGCT
    ATGAACCGAC GAAGGACACT GTCACTTTAT GTAGGAAGTT CCACCGTCGA CAATCCCGAC TTAGAAGACC TCTTTTCCCA CGGTAGAGTC CTCTTATCGA

2501 TTTACTCTGG TAGGAATGCT TCCGAGACAC CACAAGGCAG CCTGAACACT CAGTTGCAGG GTCGGGCTTG CGGTGGGTGA CCCAGAGCCA CCAAAGTCAC
    AAATGAGACC ATCCTTACGA AGGCTCTGTG GTGTTCCGTC GGACTTGTGA GTCAACGTCC CAGCCCGAAC GCCACCCACT GGTCTCAGT GGTTCAGTG

2601 ATCCACAAC ATGAGGGAA ATCTGTAAAG CCAGTTAGAT AGAAGAGTTT TATTTTCTG TGGGTTTTGT GTTGTCTTTT TTATGTTAAA AAGAAATCCA
    TAGGTGTGA TTACTCCCTT TAGACATTTT GGTCAATCTA TCTTCTCAA ATAAAAAGAC ACCCAAAACA CAACAGAAAA AATACAAATTT TTCTTTTAGT

2701 GTTTGTGTTT TTCTATAGAA AAAGTAAAG ATCAGGTTAT ACTTTAGGTT AGGGTTCTA TTTATTCTCT TTAGTAAATA AAATTAACAA ATTTCTTTGT
    CAAACACAAA AAGATATCTT TTTCATTTTC TAGTCCAATA TGAAATCCAA TCCCAAGAT AAATAAGGAC AATCATTTTAT TTAAATGTTT TAAAGAAAAA

2801 TTAACAAAAG ATTAATCTTT AAACCACTAA AATACATAGA CTGATTGATT ATTCAACACA TTGGAATTGA TGTGGGTCT AGTTTCTCTGA AGCATTTAGT
    AATTGTTTTC TAATTAGAAA TTTGGTGATT TTATGTATCT GACTAACTAA TAAAGTTGTGT AACCTTAACT ACAGCCAGTA TCAAAGGACT TCGTAAATCA

2901 TACAACCTGA AGGAATAAAA TGATTTGTGG AAATGCTTAA AATAGACCTA ACTGAATACA GTCTCATCTT GCCCGGCCCTG GCTTACCTAT CTGTGGAAG
    ATGTTGGACT TCCTTATTTT ACTAAACACC TTACGGAATT TTATCTGGAT TGACTTATGT CAGAGTAGAA CGGCGCGGAC CGAATGGATA GACACCTTTC

3001 CTAGGCTTCC CAGGTGGGCT CTGCCTGTCT GGTGCCTGGA GGTGTGGGAG GGAAGATGAG TTATTTAACT GGTAAAGCGAT TTGAAACACT ATTTTATAT
    GATCCGAAGG GTCCACCCGA GACGGACAGA CCACGGACCT CCACACCTC TCTATCTTGT GTTTTGAAC TTCTTCAAAA TACGCACACT GTCACATACC CCGACGTCAA

3101 TAAAGTAAAT GGCATGGAGT ATAGTGCAA TTCATTTTTA AGATAGAACA CAAAACCTGA AAGAAGTTTT ATGCGTGTGA CAGTGTATGG GGCTGCAGTT
    ATTTCAATTA CCGTACCTCA TATCACGTTT AAGTAAAAAT TCTATCTTGT GTTTTGAAC TTCTTCAAAA TACGCACACT GTCACATACC CCGACGTCAA

3201 GGTCCTCCCT GAGGGGACTT CCACACCTCC TGCCCTTAGG CCATGGGTGG AAAGTGCTCA GTGAAGTACA CCTGTGTGGC CCAGTCTCTGA AAGCTTTATA
    CCAGAGGGAC CTCCCCCTGA GGTGTGGAGG ACGGAAATCC GTTACCGAGT CACTTCATGT GGACACACCG GGTCAAGACT TTCGAAATAT

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FIG. 5C

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3301 CAGTTGAATT TTAAGTGGG TTGATAACAC CTGGACTGT TAGTGTAAA AATCTAGTGG GTTGACCTTT AAATGCACAG TTTTAAAAAT ATATTGCTGC
GTCAACTTAA AATTCACCCC AACTATTGTG GAACCTGACA ATCACAATTT TTAGATCACC CAACCTGGAAA TTTACGTGTC AAAAATTTTA TATAACGACG

3401 ATTTTATAGA ATAGTAAAG TACGATTATA CTGAGATT TTCTCCATTT TCCTTCCTTC GTGAACATAG AGTTTGGGCG CGAAAAATGTT TTTAAAAGTAT
TAAAAATATCT TATCATTTCC ATGCTAATAT GAACTCTAAA AGGAGGTAAA AATAAAGAAG CACTTGATC TCAAAACCCG GCTTTTACAA AAATTTTCATA

3501 GTCTTTGAGT TAAATATAAA GTTGGTTTCA TTTCAAAGCTA AAAAATTGTT AAACCTGCAG CTTGGTATTG CAGAGAAGAT TTTATAAGAA TTTTGCTTTTA
CACAAACTCA ATTTATATTT CAACCAAGTG AAGTTTCGAT TTTTAAACAA TTTGAACGTC GAACCATAAC GTCTCTTCTA AAATATTCTT AAAACGAAAT

3601 GAGAATGCCA CTTTGGCTGA ACTACAAGTG TAGGCCACCA TTATAATTTA TAAATCCAGC ATACTTCAAA ACTGTTTGT ATCTCTTGT ACCATGATG
CTCTTACGGT GAAACCGACT TGATGTTTCA ATCCGGTGGT AATATTAAAT ATTTAGGTG TATGAAGTTT TGACAAACAA TAGAGAACAA TGGTACATAC

3701 TATAAATGGA CCTTTTATAA CCTTGTCTC TGCTTGACAG ACTCAAGAGA AACTACCCAG GTATTACACA AGCCAAAATG GGAGCAAGGC CTTCCTCTCCA
ATATTTACCT GGAAAAATAT GGAAACAAGAG ACGAACTGTC TGAGTTCTCT TGATGGGTC CATAATGTGT TCGGTTTTTAC CCTCGTTCCG GAAGAGAGGT

3801 GACTATCGTA ACCTGGTGCC TTACCAAGTT GTGCTTTTCT GTTTTCAAGT GTAAATGATG TTGAGCAGAA TGTGTGACTT GAAAAATGCTA TAAGTGAGAT
CTGATAGCAT TGGACCACCG AATGGTTCAA CACGAAAAGA CAAAAGTTCA CATTTACTAC AACTCGTCTT ACAACATGAA CTTTTTACGAT ATTCACCTCTA

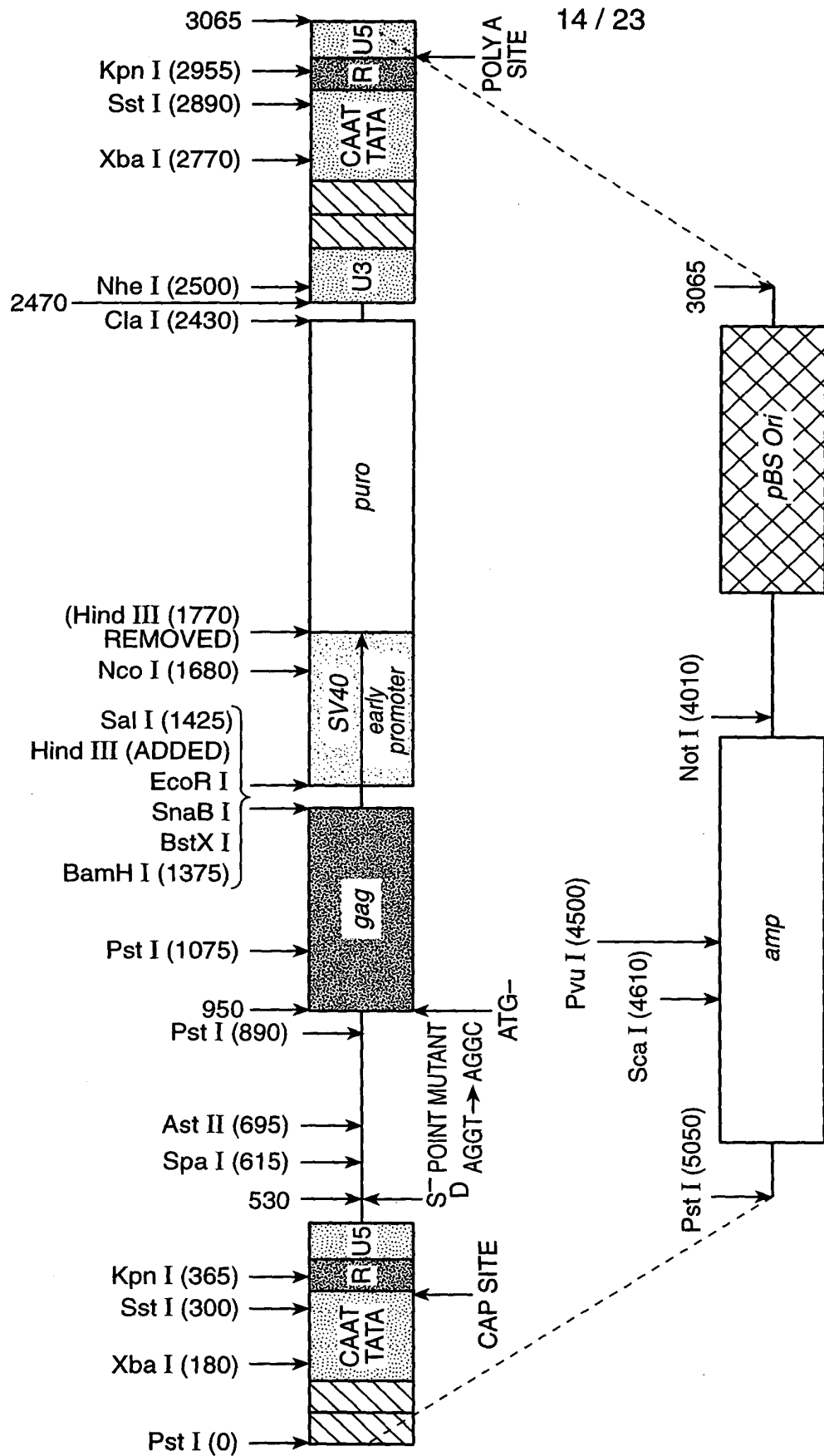
3901 GGTATGAAAT AAATCTTGAC TTATGAATAT AAAAAAAAAA AAAAAAAAAA AAAAAAAAAA
CCATACTTTA TTAAAGACTG AATACTTATA TTTTTTTTTT TTTTTTTTTT TTTTTTTTTT
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FIG.\_5D

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mouse.cl.65	1	M	A	P	Q	Q	G	R	P	A	L	P	A	R	C	E	P	P	A	A	P	P	V	P	P	R	R	R	G	G	R	G	A	R	G	P	G	V	S	G	G	R	A	G	G	A	E	G			
human.cl.65	1	M	P	P	Q	Q	G	D	P	A	F	P	D	R	C	E	.	.	.	A	P	P	V	P	P	R	R	R	G	G	R	G	A	R	G	P	G	E	P	G	G	R	A	G	G	A	E	G			
mouse.cl.65	51	R	G	V	K	C	V	L	V	G	D	G	A	V	G	K	T	S	L	V	V	S	T	T	N	G	Y	P	T	E	Y	I	P	T	A	F	D	N	F	S	A	V	S	V	D	G	R	P	V		
human.cl.65	48	R	G	V	K	C	V	L	V	G	D	G	A	V	G	K	T	S	L	V	V	S	T	T	N	G	Y	P	T	E	Y	I	P	T	A	F	D	N	F	S	A	V	S	V	D	G	R	P	V		
mouse.cl.65	101	R	L	Q	L	C	D	T	A	G	Q	D	E	F	D	K	L	R	P	L	C	Y	T	N	T	D	I	F	L	L	C	F	S	V	V	S	P	T	S	F	Q	N	V	G	E	K	W	V	P	E	I
human.cl.65	98	R	L	Q	L	C	D	T	A	G	Q	D	E	F	D	K	L	R	P	L	C	Y	T	N	T	D	I	F	L	L	C	F	S	V	V	S	P	S	S	F	Q	N	V	S	E	K	W	V	P	E	I
mouse.cl.65	151	R	R	H	C	P	K	A	P	I	L	V	G	T	Q	S	D	L	R	E	D	V	K	V	L	I	E	L	D	K	C	K	E	K	P	V	P	E	E	A	A	K	L	C	A	E	E	V	K	A	
human.cl.65	148	R	R	H	C	P	K	A	P	I	L	V	G	T	Q	S	D	L	R	E	D	V	K	V	L	I	E	L	D	K	C	K	E	K	P	V	P	E	E	A	A	K	L	C	A	E	E	I	K	A	
mouse.cl.65	201	V	S	I	E	C	S	A	L	T	Q	K	N	L	K	E	V	F	D	A	A	I	V	A	G	I	Q	H	S	D	S	Q	L	Q	P	K	K	S	K	S	R	T	P	D	K	V	R	D	L	S	
human.cl.65	198	A	S	I	E	C	S	A	L	T	Q	K	N	L	K	E	V	F	D	A	A	I	V	A	G	I	Q	Y	S	D	T	Q	Q	Q	P	K	K	S	K	S	R	T	P	D	K	M	K	N	L	S	
mouse.cl.65	251	K	S	W	W	R	K	Y	C	C	L	A																																							
human.cl.65	248	K	S	W	W	K	K	Y	C	C	F	V																																							

FIG.-6



**FIG. 7**

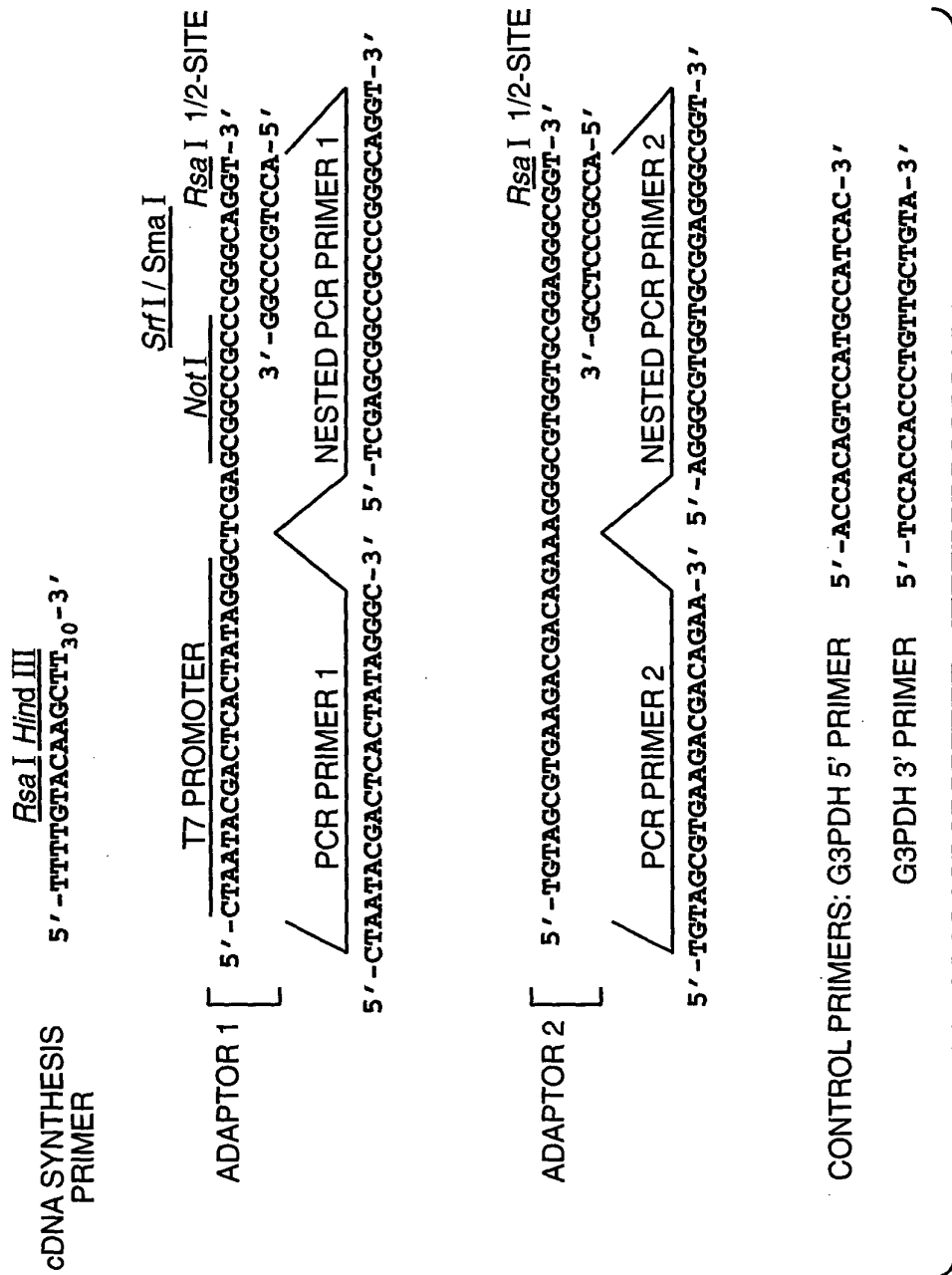


FIG. 8

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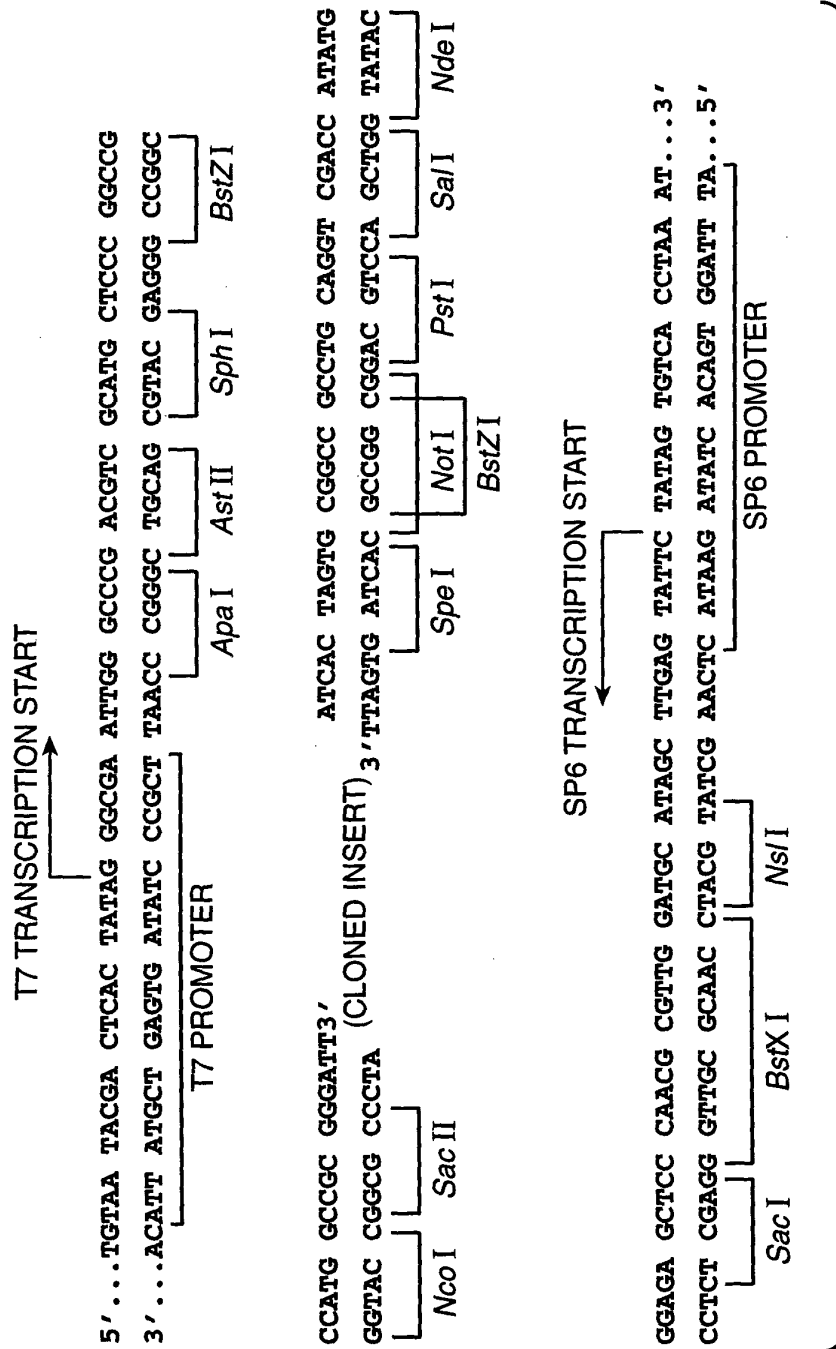


FIG.-9



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5' -CCCACGCGTCCGCGCGGTGGGCAAGACCAGCCTGGTGGTCAGCTACACCACTAACG  
GCTACCCCAACGAGTACATCCCTACGGCCTTCGACAACCTCTCGGC  
CGTGGTGTCTGTAGATGGGCGGCCTGTGAGACTCCAGCTCTGTGACACTGCAGGACAGG  
ATGAGTTTGACAAGCTGAGGCCCTCTGCTACACCAACACAGACATCTTCCTGCTGTGCTTCA  
GCGTGGTGAGCCCCACATCCTTCCAGAACGTGGGCGAGAAGTGGGTTCAGAGATTTCGAC  
GTCACTGCCCAAAGGCCCCCATCATCCTGGTCGGGACACAGTCGGACCTCAGGGAGGACGTCA  
AAGTGCTCATAGAAGCTGGCTTCTGCAGGCATCTGTGTCCTGCTGTTAAAAGCAGGAGGAG  
GTGCTTGTCTGGGAGCTTTAAGTGTGCTGGGCTCATATCGTCCCGTTTGCAAGGAATTG  
GGCCACCTTGAGAGGCCATAGTTGATGGCTATGGGACACACACACACTTTTTCTTAAGTCC  
ACCAAAATGCCTGCCTGTACACACACACACACACACACACACACACACACACACACT  
GGCTGGTTTGCTGATGGAACCCTTAGACCACCCTCCACCCCCACCCCTCCCCAAGCATGGC  
TGCAAGTGTGAGGGCACCACACCTTCCTCTTCTTGACATTTCTTTGAACAGACATCATTT  
TGTAGGATCTTAATTTATACATTTTTTTTCAGGTCATAAAATGTGGGATGAACATACT  
TTGAACCCCAAGTGCCTTCAGGGTCCATTGACTAGGGAGGCACTGTCTTAGGGGACAGGTAT  
GTGCAAGGCCTTACCCACCAGTGGCTTCTCGCTGCAGGTCATGTTTGTGGCACTTGTCTT  
TAAGGTGAGGGTCTTATGACCGACTGTTCTGAGACAGCCCTGTGTCAGGCAAGCTCTTT  
CACAGGGTGTAGGTATTTCCAAGACGCCATAGGAACCAGACAGTGAATCATAGCTATCAGT  
TTGCTGTGGGCAAGGAACCTCTTTTTGGCCACCTGGTAACAAAATTTTATGTCT  
GTAAATTTTTTCTTGCTATTTAAAAAATAATCAATCTTACGTTTTTCTGTAGGAAA  
AAAAAACAAGTAAAAGAACAGGCCATATTTCAAGGTCAAAGGCTTCTTCCTGCTG  
GTAAATGGGACTGAAGACTTTCTTACATCATTATTAAGGCTAATTGCTGAACCA  
CTAGAGTATATGAAGTGTGTTGTGAATGATATTAGCCATAGTCTCCTGAGGTGTTT  
CCTTGTGGCCTGAGTGGTAACATTGTTTTGCTTATGGAGATGCTGTAAGTACCTAGTGACTCAGC  
TTATCCTATTGTGCATGGCTGTCTGGAAAGCCAGCGTACAAGTGGGGCTTGCCTGCCCTGTGTA  
CAGAGGGTGGGTGGGAAAGAGTGAATTATTTAATTTAAATGTTATAATAAGCCAATGTAGTTGA  
GACCAAGGAAATGAGCATTGAGAACACAACTTGAAGTCTGGTGCCAGGGTTGTTGGACCTC  
ACACCCTGTCTCTGAGCCACCCGGAAGTGACATAAAGGACGCTGTGTGATCAAGT  
TCTGGACACTTTTCTGGGATGCGTACCCTGGACTATTTATGTCACAAATCTAGTGGGT  
GACGCTGCCCTGCAAGTTTTCAATGTCCCTGCATCCTATGAAGTCATAATGTCTGAC  
TGTAAGTGGAGGTTTTCTGCATTTTTTACTTTTCGAAAATAGAGGTTTGGGCTGAGAAT  
TCTAAACGCATGTGCCTGGGTGGGACGTCAAGTCAGGGTTCTCATCAAAGCTGAGAA  
GTGGCTGGAATGTTTCAGCTTGGTGTCTGGGGAGGATCCTGTGAGCTATGTAGA  
GAGGTGGCTCTTCAGCCTGACTCAGTGTGGGCTGAACGAAGTACCTGCAGAACACACGGT  
AGCAGGCTCCAAAATCGTCACCTCAAGCATGCGTGCAAGCAAACCTCCGAGAACTCC  
GTTTTCTGCTCGGCAGACGTGTGAGCAGTACCCAGAAGTCTCAAGCCAAAAGGGGAGCCTCG  
CTCGCTGGCTCCTCTGCAGGTGCCTTATCGACCTGTGCTCTTCTCTTTTCCCGTGTCAA  
GATGTTGGACAGGATCTTGTAATTGAAACATACTACAAATGAGTTACTATGAAATAAATTC  
TGACCTGTGGACCGAAAAA

**FIG. 10**

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5' -CCCACGCGTCCGCACGTGACCAGTTATATTGCTATGAAAATGGTGGAGATGCCTCGTA  
GAAGGCGAGTGCTGGGTGCACATGTGACATTTTCTTCAGGGAGCGACTCATGGTGAGACCA  
GAGAGGGCTCTTAGCTTGCAGGACTGGCTTCTGCAGGGCATCTGTGTCTGCTGTTAAAAG  
CAGGAGGAGGTGCTTGTCTGGGAGCTTTAAGTGTGCTGGGCTCATATCGTCCCGTTTGCA  
AGGAATTGGGCCACCTTGAGAGGCCATAGTTGATGGCTATGGGACACACACACACTTTTT  
CCTTAAGTCCACCAAAATGCCTGCCTGTACACACACACACACACACACACACACACAC  
ACACACACACTGGCTGGTTTGCTGATGGAACCCTTAGACCACCCTCCACCCCCACCCCT  
CCCCAAGCATGGCTGCAAGTGTGAGGGCACCACACCTTCCTCTTCTTGACATTTCTTTGA  
ACAGACATCATTTTGTAGGATCTTAATTTATACATTTTTTTTCAGGTCATAAAATGTGGGA  
TGAACATACTTTGAACCCAGTGCCTTCAGGGTCCATTGACTAGGGAGGCACTGTCTTAG  
GGGACAGGTATGTGCAAGGCCTTACCCACCAGTGGCTTCTCGCTGCAGGTCATGTTTGTG  
GCACTTGTTCTTTAAGGTGAGGGTCTTATGACCGACTGTTCTGAGACAGCCCTGTGTCAG  
GCAAGCTCTTTCACAGGGTTGTAGGTATTTCCAAGACGCCATAGGAACCAGACAGTGAAT  
CATAGCTATCAGTTTGCTGTGGGCAAGGAACCTCTTTTGGCCACCTGGTAACAAAATTT  
TATGTCTGTAAATTTTTTCTTGCTATTTAAAAAATAATCAATCTTACGTTTTTCTGT  
AGGAAAAAAAAAACAAGTAAAGAACAGGCCATATTTAGGTCAAAGGCTTCTTCCTGC  
TGGTAAATGGGACTGAAGACTTTCTTACATCATTATTAAGGCTAATTGCTGAACCACT  
AGAGTATATGAAGTGTGTTGTGAATGATATTAGCCATAGTCTCCTGAGGTGTTTCCTTG  
GCCTGAGTGGTAACATTGTTTTGCTTATGGAGATGCTGTAAGTACCTAGTGACTCAGCT  
TATCCTATTGTGCATGGCTGTCTGGAAAGCCAGCGTACAAGTGGGGCTTTGCCTGCCCTG  
TGTACAGAGGGTGGGTGGGAAAGAGTGAATTATTTAATTTTAAATGTTATAATAAGCCA  
ATGTAGTTGAGACCAAGGAAATGAGCATTGAGAACACAACTTGAAGTCTGGTGCCAGGG  
TTGTTGGACCTCACACCTGTCTCTGAGCCACCCGGAAGTGACATAAAGGACGCTGTGTG  
ATCAAGTTCTGGACACTTTTCTGGGATGCGTACCCTGGACTATTTATGTCACAAATCTA  
GTGGGTTGACGCTGCCCTGCAAGTTTTCAATGTCCCTGCATCCTATGAAGTCATAATGTC  
TGACTGTACTGGAGGTTTTCTGCATTTTTACTTTTCGAAAATAGAGGTTTGGGCTGAG  
AATTCTAAACGCATGTGCCTGGGTGGGACGTCAAGTCAGGGTTCTCATCAAAGCTGAGAA  
GTGGCTGGAATGTTTCAGCTTGGTGTCTGGGGAGGATCCTGTGAGCTATGTAGAGAGGTGG  
CTCTTCAGCCTGACTCAGTGTGGGCTGAACGAAGTACCTGCAGAACACACGGTAGCAGGC  
TCCAAAATCGTCACCTCAAGCATGCGTGCAAGCAAACCTCCGAGAACTCCGTTTTCTGCT  
CGGCAGACGTGTGAGCAGCTACCCAGAAGTCTCAAGCCAAAAGGGGAGCCTCGCTCGCTG  
GCTCCTCTGCAGGTGCCTTATCGACCTGTGCTCTTCTCTTTTCCCGTGTCAAAGATGTTG  
GACAGGATCTTGTACTTGAAACATACTACAAATGAGTTACTATGAAATAAATTCTGACCT  
GTGGACCGAAAAAAAAAAAAAAAA

**FIG. 11**

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5' -CCCACGCGTCCGCGCCGAGGGACGCGGCGTCAAGTGCGTGCTGGTGGGCGACGGCGCGGT  
GGGCAAGACCAGCCTGGTGGTCAGCTACACCACTAACGGCTACCCACCGAGTACATCCC  
TACGGCCTTCGACAACTTCTCGGCCGTGGTGTCTGTAGATGGGCGGCCTGTGAGACTCCA  
GCTCTGTGACACTGCAGGACAGGATGAGTTTGACAAGCTGAGGCCCTCTGCTACACCAA  
CACAGACATCTTCCTGCTGTGCTTCAGCGTGGTGAGCCCCACATCCTTCCAGAACGTGGG  
CGAGAAGTGGGTTCAGAGATTCGACGTCACTGCCCAAAGGCCCCCATCATCCTGGTCGG  
GACACAGTCGGACCTCAGGGAGGACGTCAAAGTGCTCATAGAACTGGACAAGTGCAAAGA  
GAAGCCGGTGCCTGAAGAGGCGGCGAAGCTGTGCGCGGAGGAAGTCAAAGCTGTCTCCTA  
CATCGAGTGCTCAGCGTTGACTCAGAAAAACCTCAAAGAGGTTTTGACGCGCCGCTTGT  
TGCTGGTATCCAGCACTCAGACTCCCAGCTACAGCCAAAGAAGTCTAAAAGCAGGACCCC  
GGATAAGGTGCGGGACCTGTCCAAGTCTTGGTGGAGGAAGTATTGCTGCCTGGCCTGACT  
CTCGCAAATAGCAGGTGTTTAAAGCTGCAACAGCTCTTTATGGACGAGGCTGTATAGGAT  
GAGCCCCAAAGCACCTCTTCTGCCCTTAACTTCCTGTGTGCGGGAGCTTAGGGCTGAGA  
TTCATATGCAAATACGTTTTTTTAAAAATTGAAAGTTACATTTTTTTTCTGTTAAGTCT  
GGAAGCTTTGAGCTGTTAGACCTCCGGATTAAATTTATATTCCATATGAAAAGGGCTCTTC  
AAAAGCGGGGGTGTACGCATGAAGTCTGCTGGTGTGTTGTACAGGACAAAGGAGAATGAA  
TGGGGAACCTTCCTCCTGAATTAAGGGGCTAACTGAAGGGCTCAATTGCAAGGGCA

**FIG. 12**

5' -CGCGGTGGGCAAGACCAGCCTGGTGGTCAGCTACACCACTAACGGCTACCCACCGAGTA  
CATCCCTACGGCCTTCGACAACTTCTCGGCCGTGGTGTCTGTAGATGGGCGGCCTGTGAG  
ACTCCAGCTCTGTGACACTGCAGGACAGGATGAGTTTGACAAGCTGAGGCCCTCTGCTA  
CACCAACACAGACATCTTCCTGCTGTGCTTCAGCGTGGTGAGCCCCACATCCTTCCAGAA  
CGTGGGCGAGAAAGTGGGTTCAGAGATTCGACGTCACTGCCCAAAGGCCCCCATCATCCT  
GGTCGGGACACAGTCGGACCTCAGGGAGGACGTCAAAGTGCTCATAGAACTGGCTTCTGC  
AGGGCATCTGTGTCCTGCTGTTAAAAGCAGGAGGAGGTGCTTGTCTGGGAGCTTTAAGTG  
TGCTGGGCTCATATCGTCCCGTTTGCAAGGAATTGGGCCACCTTGAGAGGCCATAGTTGA  
TGGCTATGGGACACACACACACTTTTTCTTAAGTCCACCAAATGCCTGCCTGTACACA  
CACACACACACACACACACACACACACACTGGCTGGTTGCTGATGGAACCC  
TTAGACCACCCTCCCACCCCCACCCCTCCCCAAGCATGGCTGCAAGTGTCAGGGCACCAC  
ACCTTCCTCTTCTTGACATTTCTTTGAACAGACATCATTTTGTAGGATCTTAATTTATAC  
ATTTTTTTCAGGTCATAAAATGTGGGATGAACATACTTTGAACCCAGTGCCTTCAGGGT  
CCATTGACTAGGGAGGCACTGTCTTAGGGGACAGGTATGTGCAAGGCCTTACCCACCAGT  
GGCTTCT

**FIG. 14**

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5' -CCCACGCGTCCGGCGCGAGCTTAGCAGATCTCCACTTACCGAACATCTAGAGAGTCGCGC  
CGCGCGCCGACGGAGCGGACATGGGCAGAGCGATGGTGGCCAGGCTAGGGCTGGGGTTGC  
TGCTTCTGGCACTGCTCCTACCCACGCAGATTTACTGCAACCAACATCTGTTGCACCGT  
TTCCCGGTAAACCAGAAATATTTCTGCTTCCCCAAATCCAAGTAACGCTACCACCAGAGGGG  
GTGGCAGCTCCCTGCAGTCCACAGCTGGTCTCCTGGGCTCTCTCTCTCTCTCTCTCCACAT  
CTCTACTGTTAGAGACTCAGGCCAGGAAACGTCTCTACTTCCCCTACCTCTAGACCTACC  
CCAAATGGCAACCACAAGTCCAATGTGATCAGGAAGAAACAGGTCCACCTCGAATTGGCT  
GTTACCATATCTCAACAGAAACACGGAGAATTTCGAAATTTCGACGGGATTAAAGGACGCG  
TGAAGGTTTTGAGAGAAGAGAGATGCCGCTATTGAATCTGCTGGAGTTTTACATCCCAAG  
ATGAAGACAGCATTCAGAATTGATGTGATTTCTTGAATGTGGCTTAGGAAAAGTGGACA  
CTTAAACTCTCATTGAAATTGGGCACAGGTTTTGATGTAGAGATAAGGACGGGGTTCGG  
AATGGAGACCCATTTTGTCAATTGATTCATCTGACCGATAAGGCCATAGTGCAGTTAGGTG  
ATATTCGAAAGCTTCTTTGATGCTCTTTATGTATATGTTGGAAGGAACCTACCAGGCGTTG  
CTTTAAATTCCCAATGTGTTGTTTCGTTACTACTAATTTAATACCGTAAGCTCTAGGTAA  
AGTTCCATGTTGTTGAACTCTGACTGTTCTCTTTGGAATTGAACGTTTTGCATCCTCCTC  
CTGTGGCTTTAGGTCTGACATTGTATTTGACCTTTACTAGTAATTAACATGTGCCAGGCA  
ATGGTGGATTGGAACCCATCCCCAAGTCCAGCCACCACTGAATAAATCTGATTTCAAAAG  
TCAAACAGTAGACATTTCCCATTTGTCGTTTCTCACTACCACAAGCACCAAAATTCCTAG  
AGTACACTGGTTCCAGAGAGCAGAATCATGTTGGCCTTGGCTAATTTCAAAATGCTGTCT  
TTTACTTTGGTATATGTTGAGGGCTTTTTTCATAATTTAAAGTGTGTTCTGTAGCAAGGC  
AAAAATTATGAGTCTTAATTCTACAGGCAATATGCAAAGGAGCCAAAACCTGTAAACCCA  
GCATTTGGGATGTGAAGACTGGAAGCTAACTCTCATTGAATTCACAAAGTCTTTTATACA  
ATTTCTGTACATACTTTTTTTTTTTTTTAAGAGAAAAACAAACGGTGGATCAGAATAGCCA  
CGTTTGAATACTTTGGTTATCCATTATATTTTTTAGATAGTTATTGGTCTGTGCCTGA  
AAGGGGGCTTGGTTCTACCGTAAGTTTTTCCAATTTCTTGATATACACATACCTTCTAA  
AACCTAGACATTTCTGAAAAAATCTTTTGTTCGCATGGTCACACACTGATGCTTACCC  
GTACAGTAGTCTTGATAACCAGAGTCATTTTCTCCATCTTTAGAAACCTTCCTGGGAAGA  
AGGAGAGCTCACAGACCCGAAGCTACTGTGTGTGTGAATGAACACTCCCCTTGCCCTCACA  
CCTGAATGCTGTACATCTATTTGATTGTAAATTGTGTTTGTGTATTTATGCTTTGATTCA  
TAGTAACTTCTCATGTTATGGAATTGATTTGCATTGAACACAAACTGTAAAAA  
AAAAAGGGCGGGCCGCCGCCCGCG  
ATGGCCCCGCAGCAAGGCCGGCCGGCGCTGCCCGCCCGCTGCGAGCCGCCGGCGGCGCCG  
CCGGTACCGCCTCGCCGAGAGCGCGGGGGCGCGGGGGCGCGGGGCCCGGGGTGTCCGGG  
GGTCGGGGGGCGCGCGGGCGGGCGCCGAGGGACGCGGCGTCAAGTGCGTGCTGGTCCGGCGAC  
GGCGCGGTGGGCAAGACCAGCCTGGTGGTCAGCTACACCACTAACGGCTACCCACCGAG  
TACATCCCTACGGCCTTCGACAACTTCTCGGCCGTGGTGTCTGTAGATGGGCGGCCTGTG  
AGACTCCAGCTCTGTGACACTGCAGGACAGGATGAGTTTGACAAGCTGAGGCCCTCTGC  
TACACCAACACAGACATCTTCTGCTGTGCTTCAGCGTGGTGAGCCCCACATCCTTCCAG  
AACGTGGGCGAGAAGTGGGTTCCAGAGATTCGACGTCACTGCCCAAAGGCCCCCATCATC  
CTGGTCGGGACACAGTCCGACCTCAGGGAGGACGTCAAAGTGCTCATAGAAGTGGACAAG  
TGCAAAGAGAAGCCGGTGCCTGAAGAGGCGGCGAAGCTGTGCGCGGAGGAAGTCAAAGCT  
GTCTCCTACATCGAGTGCTCAGCGTTGACTCAGAAAAACCTCAAAGAGGTTTTTCGACGCC  
GCCATTGTTGCTGGTATCCAGCACTCAGACTCCCAGCTACAGCCAAAGAAGTCTAAAGC  
AGGACCCCGGATAAGGTGCGGGACCTGTCCAAGTCTTGGTGGAGGAAGTATTGCTGCCTG  
GCCTGACTCTCGCAAATAGCAGGTGTTAAGCTGCAACAGCTCTTTATGGACGAGGCTGT  
CATAGGATGAGCCCCAAGCACCCCTCTTCTGCCCTTAACCTCCTGTGTGCGGGAGCTTAG  
GGCTGAGATTCATATGCAAATACGTTTTTTTTTAAAAATTGAAAGTTACATTTTTTTCTG

**FIG. 13A**

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TTAAGTCTGGAAGCTTTGAGCTGTAGACCTCCGGATTAATTTATATTCCATATGAAAAGG  
GCTCTTCAAAGCGGGGTGTCAGCATGAAGTTCTGCTGTGTTGTACAGGACAAAGGAGAAT  
GAATGGGACCTTCTCCTGATTAAGGGCTACTGAGGGCTCAGTGCAGGGCACGTGTGCACC  
AGGCTTGGTGAGAGTGAGCAAGCGTGAGCTTTGAAACCACACGAGCCACCCCCGGTTTTG  
TAAGGGCAAAGATCTGAAACCAGCAAGGGCCTTCTGCTTACGAAACCTCGAGCCCATCCC  
TTCTGTTTACTCAGATTCTCTTAGGATTTTAAAACAACCAACATCCCACAGCCTACTGG  
CATAGTGTGGCGAACAGTGCACCTGCTTGTACGGTTTTGTTTTGTTTTTTTAAATCAC  
GTGACCAGTTATATTGCTATGAAAATGGTGGAGATGCCTCGTAGAAGGCGAGTGTGGGT  
GCACATGTGACATTTTCTTCAGGGAGCGACTCATGGTGAGACCAGAGAGGGCTCTTAGCT  
TGCAGGACTGGCTTCTGCAGGGCATCTGTGTCCTGCTGTTAAAAGCAGGAGGAGGTGCTT  
GTCTGGGAGCTTTAAGTGTGCTGGGCTCATATCGTCCCCTTTGCAAGGAATTGGGCCACC  
TTGAGAGGCCATAGTTGATGGCTATGGGACACACACACACTTTTTCCTTAAGTCCACCAA  
AATGCCTGCCTGTACACACACACACACACACACACACACACACACACACTGGCT  
GGTTTGCTGATGGAACCCCTTAGACCACCCTCCCACCCCCACCCCTCCCCAAGCATGGCTG  
CAAGTGTGAGGGCACCACACCTTCCCTCTTCTTGACATTTCTTTGAACAGACATCATTTTG  
TAGGATCTTAATTTATACATTTTTTTTTCAGGTCATAAAATGTGGGATGAACATACTTTGAA  
CCCCAGTGCCTTCAGGGTCCATTGACTAGGGAGGCACTGTCTTAGGGGACAGGTATGTGC  
AAGGCCTTACCCACCAGTGGCTTCTCGCTGCAGGTGATGTTTGTGGCACTTGTTCTTTAA  
GGTGAGGGTCTTATGACCGACTGTTCTGAGACAGCCCTGTGTGAGGCAAGCTCTTTCACA  
GGGTTGTAGGTATTTCCAAGACGCCATAGGAACCAGACAGTGAATCATAGCTATCAGTTT  
GCTGTGGGCAAGGAACCTCTTTTTTGCCACCTGGTAACAAAATTTTATGTCTGTAAATTT  
TTTCTTGCTATTTAAAAA

**FIG. 13B**

5' - CCCACGCGTCCGCGGACGCGTGGTTCAGGGTCCATTGACTAGGGAGGCACTGTCTTAGGG  
GACAGGTATGTGCAAGGCCTTACCCACCAGTGGCTTCTCGCTGCAGGTGATGTTTGTGGC  
ACTTGTCTTTAAGGTGAGGGTCTTATGACCGACTGTTCTGAGACAGCCCTGTGTGAGGC  
AAGCTCTTTCACAGGGTGTAGGTATTTCCAAGACGCCATAGGAACCAGACAGTGAATCA  
TAGCTATCAGTTGCTGTGGGCAAGGAACCTCTTTTTGGCCACCTGGTAACAAAATTTTA  
TGTCTGTAAATTTTTTCTTGCTATTTAAAAAATCAATCTTACGTTTTTCTGTAGG  
AAAAAACAAGTAAAAGAACAGGCCATATTTCAAGGTCAAAGGCTTCTTCCTGCTGG  
TAAATGGGACTGAAGACTTTCTTACATCATTTATTAAGGCTAATTGCTGAACCACTAGA  
GTATATGAACGTGTTTGTGAATGATATTAGCCATAGTCTCCTGAGGTGTTTCTTGTGGCC  
TGAGTGGTAACATTGTTTTGCTTATGGAGATGCTGTAAGTACCTAGTGAAGTCAAGCTTAT  
CCTATTGTGCATGGCTGTCTGGAAAGCCAGCGTACAAGTGGGGCTTTGCCTGCCCTGTGT  
ACAGAGGGTGGGTGGGAAAGAGTGAATTATTTAAATTTTAAATGTTATAATAAGCCAATG  
TAGTTGAGACCAAGGAAATGAGCATTGAGAACACAACTTGAAGTCTGGTGCCAGGGTTG  
TTGGACCTCACACCCTGTCTCTGAGCCACCCGGAAGTGACATAAAGGACGCTGTGTGATC  
A

**FIG. 17**

5'-CCCACGCGTCCGTATGAAAATGGTGGAGATGCCTCGTAGAAGGCGAGTGCTGGGTGCACATG  
TGACATTTTCTTCAGGGAGCGACTCATGGTGAGACCAGAGAGGGCTCTTAGCTTGCAGGAC  
TGGCTTCTGCAGGGCATCTGTGTCCTGCTGTTAAAAGCAGGAGGAGGTGCTTGTCTGGGAGCTTTAA  
GTGTGCTGGGCTCATATCGTCCCGTTTGCAAGGAATTGGGCCACCTTGAGAGGCCA  
TAGTTGATGGCTATGGGACACACACACACTTTTTCCTTAAGTCCACCAAATGCCTGCCTGTA  
CACACACACACACACACACACACACACACACACACTGGCTGGTTTGCTGATGGAA  
CCCTTAGACCACCCTCCACCCCCACCCCTCCCCAAGCATGGCTGCAAGTGTGAGGGCACCACAC  
CTTCCTCTTCTTGACATTTCTTTGAACAGACATCATTTTGTAGGATCTTAATTTATAC  
ATTTTTTTTCANGTCATAAAATGTGGGATGAACATACTTTGAACCCCAGTGCCTTCAGGGTC  
CATTGACTAGGGAGGCACTGTCTTAGGGGACAGGTATGTGCAAGGCCTTACCCACCAGT  
GGCTTCTCGCTGCAGGTCATGTTTGTGGCACTTGTTCTTTAAGGTGAGGGTCTTATGACCG  
ACTGTTCTGAGACAGCCCTGTGTCAGGCAAGCTCTTTCACAGGGTGTAGGTATTTT  
CAAGACGCCATAGGAACCAGACAGTGAATCATAGCTATCAGTTTGCTGTGGGCAAGGAACC  
TCTTTTTGGCCACCTGGTAACAAAATTTTATGTCTGTAAATTTTTTCTTGCTATTTAAAA  
AAAAAATCAATCTTACGTTTTTCTGTAGGAAAAAAAAAAAAACAAGTAAAAGAACAGGCCAT  
ATTTCAAGTCAAAGGCTTCTTCCTTCTGGTAAATGGGACTGAAGACTTTCTTACATCA  
TTATTAAAAGGCTAATTGCTGAACCACTAGAGTATATGAACCTGTTTGTGAATGATATTAGC  
CATAGTCTCCTGAGGTGTTTCCTTGTGGCCTGAGTGGTAACATTGTTTTGCTTATGGAGA  
TGCTGTAAGTACCTAGTGAAGTCAAGCTTATCCTATTGTGCATGGCTGTCTGGAAAGCCAG  
CGTACAAGTGGGGCTTGCCTGCCCTGTGTACAGAGGGTGGGTGGGAAAGAGTGAATT  
ATTTAATTTTAAATGTTATAATAAAGCCAATGTAGTTGAGACCAAGGAAATGAGCATTGAGA  
ACACAAACTTGAAGTCTGGTGCCAGGGTTGTTGGACCTCACACCCTGTCTCTGAGCCACC  
CGGAAGTGACATAAAGGACGCTGTGTGATCA

**FIG.\_15**

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5' -CCCACGCGTCCGGTGACCAGTTATATTGCTATGAAAATGGTGGAGATGCCTCGTAGAAGG  
CGAGTGCTGGGTGCACATGTGACATTTTCTTCAGGGAGCGACTCATGGTGAGACCAGAGA  
GGGCTCTTAGCTTGCAGGACTGGCTTCTGCAGGGCATCTGTGTCCTGCTGTTAAAAGCAG  
GAGGAGGTGCTTGTCTGGGAGCTTTAAGTGTGCTGGGCTCATATCGTCCCGTTTGCAAGG  
AATTGGGCCACCTTGAGAGGCCATAGTTGATGGCTATGGGACACACACACACTTTTTCCT  
TAAGTCCACCAAAATGCCTGCCTGTACACACACACACACACACACACACACACACACACA  
CACACACTGGCTGGTTTGCTGATGGAACCCTTAGACCACCCTCCACCCCCACCCCTCCC  
CAAGCATGGCTGCAAGTGTGAGGGCACCACACCTTCTTCTTGACATTTCTTTGAACA  
GACATCATTTTGTAGGATCTAATTTATACATTTTTTTTCAGGTCATAAAATGTGGGATGAA  
CATACTTTGAACCCAGTGCCTTCAGGGTCCATTGACTAGGGAGGCACTGTCTTAGGGGA  
CAGGTATGTGCAAGGCCTTACCCACCAGTGGCTTCTCGCTGCAGGTCATGTTTGTGGCAC  
TTGTTCTTTAAGGTGAGGGTCTTATGACCGACTGTTCTGAGACAGCCCTGTGTCAGGCAA  
GCTCTTTCACAGGGTTGTAGGTATTTCCAAGACGCCATAGGAACCAGACAGTGAATCATA  
GCTATCAGTTTGTGCTGTGGGCAAGGAACCTCTTTTTGGCCACCTGGTAACAAAATTTTATG  
TCTGTAAATTTTTTCTTGCTATTTAAAAAATAATCAATCTTACGTTTTTCTGTAGGAA  
AAAAAACAAGTAAAAGAACAGGCCATATTTTCAGGTCAAAGGCTTCTTCTGCTGGTA  
AATGGGACTGAAGACTTTCTTACATCATTATTTAAAGGCTAATTGCTGAACCACTAGAGT  
ATATGAAGTGTGTTGTGAATGATATTAGCCATAGTCTCCTGAGGTGTTTCCTTGTGGCCTG  
AGTGGTAACATTGTTTTGCTTATGGAGATGCTGTAAGTACCTAGTGAAGTCAAGCTTATCC  
TATTGTGCATGGCTGTCTGGAAAGCCAGCGTACAAGTGGGGCTTGCCTGCCCTGTGTAC  
AGAGGGTGGGTGGGAAAGAGTGAATTATTTAATTTTAAATGTTATAATAAGCCAATGTA  
GTTGAGACCAAGGAAATGAGCATTGAGAACAACAACTTGAAGTCTGGTGCCAGGGTTGTT  
GGACCTCACACCCTGTCTCTGAGCCACCCGGAAGTACATAAAGGACGCTGTGTGATCAA  
GTTCTGGACACTTTTCTGGGATGCGTACCCTGGACTATTTATGTACAAATCTAGTGGG  
TTGACGCTGCCCTGCAAGTTTTCAATGTCCCTGCATCCTATGAAGTCATAATGTCTGACT  
GTACTGGAGGTTTTCTGCAATTTTTTACTTTTCGAAAATAGAGGTTTGGGCTGAGAATTC  
TAAACGCATGTGCCTGGGTGGGACGTCAAGTCAGGGTTCTCATCAAAGCTGAGAAGTGGC  
TGGAATGTTTCAGCTTGGTGTCTGGGGCAGGCTCCAAAATCGTCACCTCAAGCATGCGTGC  
AAGCAAACCTCCGAGAACTCCGTTTTCTGCTCGGCAGACGTGTGAGCAGCTACCCAGAAG  
TCTCAAGCCAAAAGGGGAGCCTCGCTCGCTGGCTCCTCTGCAGGTGCCCTTATCGACCTGT  
GCTCTTCTCTTTTCCCGTGTCAAAGATGTTGGACAGGATCTTGTACTTGAAACATACTAC  
AAATGAGTTACTATGAAATAAATCTGACCTGTGGACCGAAAAAAAAAAAAAAAAAAAAA  
AAAAAAAAAAAAAAAAAAAAAAAAAAAAA

**FIG. 16**